

Sole Source Justification Form

Bulletin Reference Number

SLR 2018

Requesting Agency/University

IL Department of Transportation

Sole Source Justification Form - Part I

Section I - General Information

Department/Bureau/Section: Office of Planning and Programming

Need Identified Date: September 2017 Supply/Service Need By Date: July 1, 2018

Project Title: Sidewalk Labs Replica Tool and Data for Travel Demand Modeling Needs

Vendor: Sidewalk Labs

Provide a description of the supplies or services required: Please reference Section VI below

Value: Estimated Value of Initial Term, this Change Order or Amendment: 3,600,000

Will this Sole Source amend a Professional or Artistic Services contract? Yes No

*Sole Source may not be used for amendments for Professional or Artistic Services if the amendment would increase the value by more than 5% of the initial award or extend the term by more than 60 days.

Type: New Sole Source

Section II - Proposed Term

 One-Time Purchase Term Contract

Estimated Contract Begin Date: July 1, 2018

Estimated Contract End Date: June 30, 2021

Number of Potential Renewals: 0

Length of Each Renewal in Months: 0

Total Value of All Renewals: 0

If a Term Contract, does the term, including renewals, exceed 12 months? Yes No

Section III - Funding Source

Select the type of funding to be used (Check all that apply): State Appropriate Funds Federal Funds Other (Explain):

Section IV - Sole Source Justification

This purchase is economically only available from a single source **primarily** because it is: (If "Other" explain in one sentence)

Items are Copyrighted or Patented and the Items are Only Available from the Holder

Are there secondary justification(s) for this sole source? Yes No

Another justification that this purchase is only available from a sole source is because it is:

Items are Needed for Trial Use or Testing

Another justification that this purchase is only available from a sole source is because it is:

Section V - Purchase History

Has the Agency or University Purchased these supplies or services in the past? Yes No

Section VI - Business Rationale

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1. Provide a detailed explanation of the need for the supplies or services:

The Bureau of Planning is undergoing an effort to develop a statewide travel demand model. As part of the process to build the model detailed travel data is needed from the study area (State of Illinois). The data that is necessary includes survey data on travel behavior related to how people move in and about a city, region, or state. Typically, this data is collected through surveys of individuals. This data is usually a very small percentage of the population and the travel demand model extrapolates how this sampling of individuals would behave if different transportation investments are made. With the Sidewalk Labs product, the data is gathered from cell phone GPS data and therefore provides a much greater statistically significant population from which to run alternative scenarios for where traffic would go if a new bridge or road were constructed. Without this data, the travel demand model would need to conduct an independent travel survey to gather similar data to what Sidewalk Labs would be producing.

2. Provide a list and describe in detail the specifications required to satisfy the need:

GPS data should provide the characteristics of individual travelers; superior to travel demand surveys, which rely on survey participants to track their own individual data; extrapolate a broader segment of the population than other data/tools that are presently on the market today; must give reliable alternative modes choice for secondary travel options; data must be updated on a quarterly basis where as household travel surveys are done less regularly.

3. Provide detail explaining the justification selected in Section IV to explain why the requested supplies or services are the only ones available that can satisfy the agency or university requirements?

Shared and Calibrated: Sidewalk Labs will provide access to Replica: a calibrated, validated, internally consistent, comprehensive, and timely regional representation of transportation and land use activities. This product will facilitate collaboration, as each agency in the region can now use the same baseline data. In doing so, Replica significantly reduces barriers to access and creates a common data framework for technical collaboration.

Charter Customer Program. Sidewalk's Charter Customer program allows early customers to evaluate Replica risk-free and only pay when the customer acceptance criteria has been met. In addition, Sidewalk Labs will invest significant upfront research and development efforts and distribute those costs between other charter customers over a multi - year period.

Data Science. Sidewalk Labs' machine learning department lead had extensive research experience in developing Bay Area travel demand model using mobile phone data techniques. While other service providers may focus on general data science's supply side, Sidewalk Labs has already established theoretical and practical links to the demand side by tailoring their products toward Travel Demand Modeling needs.

Data access. Sidewalk Labs leverages both public and proprietary data sets in building modeling and planning tools. Sidewalk's software engineering and data science team has the unique ability to handle privacy-sensitive datasets and extremely large datasets.

Software-as-a-Service: Sidewalk Labs delivers this unique combination via a browser-based web-service, requiring no client software installation, on premise storage solutions, or expensive hardware. There are no restrictions to the number of users as long as they belong to the same organization. Model updates are provided four (4) times each calendar year as part of an annual subscription fee.

Sidewalk Labs is refining data within major metropolitan areas throughout the nation, including the Chicago metropolitan area. Having the Chicago metropolitan area is useful in developing the statewide travel demand model, however we would need it for statewide for the maximum effectiveness. Given Sidewalks Labs focus on major metropolitan area, statewide data is likely to take two years to refine and be made for use. For us to receive maximum benefit, the data will need to be reviewed and included in our travel demand model. That will take, at minimum an additional year.

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4. What are the unique features of the supplies or services that are not available in any other product or by any other vendor? Provide specific quantifiable factors/qualifications:

Sidewalk Labs has several distinct advantages over its competitors:

- The characteristics of individual travelers are available. To protect individual privacy, data compiled by Sidewalk Labs are anonymized so that individual travelers cannot be identified. However, Replica is integrated with a population synthesizer (Doppelganger) which creates a statistically valid set of household and person attributes based on Census data. These "Synthetic" residents make the trips reported by Replica, and all of their individual and household characteristics are available by allowing for analysis of not only what trips are being made, but by whom. The algorithms used to develop the daily itineraries of agents in the synthetic populations are based on analyzing locations from millions of devices.
- Replica is an analysis tool, not a dataset. A unique aspect of Replica is that for each trip it not only reports the most likely mode used to make that trip, but it also reports the probabilities of that trip being made by each of the competing modes available. This feature can specifically help with analyses to see how close individuals are to choosing a different mode of travel. Also, Replica provides link-level information on who is traversing a specific link and what their personal and household attribute data at this level of granularity.
- The contract terms include calibration of Replica. Sidewalk Labs will calibrate Replica to local data to ensure that its results closely match the travel patterns seen in observed data. The firm works with local agencies to develop mutually-agreed upon Acceptance Criteria before payment begins. Replica, data is also updated quarterly, allowing for the possibility of showing seasonal variation in travel patterns.

5. Has the Agency or University considered alternative supplies or services to satisfy their need? Yes No

5a. If yes, name the alternative vendors whose supplies or services were evaluated:

AirSage, StreetLight, Teralytics

5b. If yes, what were the alternatives for each vendor and why were they unacceptable? Be specific with regard to features, characteristics, requirements, capabilities and compatibility:

These firms also offer mobile phone location data that are used to develop trip origins and destinations by time of day. The purpose of each trip is generally imputed from the location data – places frequently visited and the arrival time and duration of stay at the locations. The general benefits of these datasets are that they cover a large geographic area, they include many observations and they have a much quicker turnaround time than collecting household travel survey. The main drawback of these datasets is that all data are aggregated so that the characteristics of individual travelers are not known. Additionally, household surveys are generally conducted once a decade or so in the Chicago region. This data is collected and provided through Sidewalk Labs is updated quarterly; meaning that analysis will be better refined and allow the Department to take seasonal weather patterns into consideration when looking at existing facilities.

5c. Explain how the market evaluation was conducted?

**This evaluation is to determine available options within a market. If the evaluation is to determine quality or best suited option, this is not the appropriate source selection. Under no circumstances shall the evaluation consist of testing alternative options. These activities must be conducted in a competitive transparent environment (i.e. IFB or RFP).*

Many of the Metropolitan Planning Organizations in the state utilize data from AirSage, StreetLight, or Teralytics. Staff asked relevant modeling staff from the state's MPOs as to what service providers they utilize for similar transportation modeling efforts.

6. Are there resellers or distributors?

Yes No N/A

7. What efforts were made to get the best possible price (i.e. did the agency/university negotiate) and how did you determine the price for this purchase is considered fair and reasonable?

The price is similar in cost to conducting a travel demand survey and acquiring large data sets.

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8. Will this purchase obligate the State to this vendor for future purchases such as maintenance, licensing or continuing need?

Yes No

8a. If yes, please provide details regarding future obligations and/or needs:

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9. What will be the financial or other impact to the State if this sole source is not approved and a competitive bid is required?

The impacts of not approving this sole source would mean that the state would have to use data that is not as refined when running our modeling tools. It would also mean that the state would need to engage in developing a household travel survey that is statistically significant. The effort to do so would be time consuming and the estimated cost would be more than the cost to procure this tool and provide less detailed, less reliable data.

10. Is there any additional information you would like to add to justify this sole source?

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Section VII

Requesting Department Signature Required

I know and understand the contents of this Sole Source Justification and attest that all statements are true and correct and the fairness and reasonableness of the price was adequately confirmed.

Requesting Department Representative

Phone Number 217-785-2994

Date Feb 7, 2018

Printed Name

Holly Ostdick

E-mail Address

Holly.Ostdick@illinois.gov

State Agency Bureau/Division Head or University Purchasing Director Approval and Signature Required

I know and understand the contents of this Sole Source Justification and attest that all statements are true and correct and the fairness and reasonableness of the price was adequately confirmed. (All prior form fields will lock once this e-signature is completed)

Agency Bureau/Division Head or University
Purchasing Director and Not a Designee

Phone Number 217-557-3891

Date Feb 7, 2018

Printed Name

Erin Aleman

E-mail Address

Erin.Aleman@illinois.gov

SPO Approval and Signature Required

I have reviewed and understand the contents of this Sole Source Justification and agree with the State Agency or University determination.

I have reviewed and understand the contents of this Sole Source Justification and do not agree with the State Agency or University determination. As a result, the State Agency or University must explore other sourcing methods to satisfy their need.

State Purchasing Officer Signature

Phone Number 217/558-5432

Date

Printed Name

Colleen Caton

E-mail Address

colleen.caton@illinois.gov